UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
DUDEK JR, EDWARD J

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _11 August 2008_.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-7,10-14 and 16-23_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) _1-7,10-14 and 16-23_ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
        1. ☐ Certified copies of the priority documents have been received.
        2. ☐ Certified copies of the priority documents have been received in Application No. _____.
        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is responsive to the after final amendment filed on 11 August

2008 in application #10/552815.

Claims 1-7, 10-14, and 16-23 are pending and have been presented for

examination.

Claims 8-9, and 15 have been cancelled.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 6, 11-13, 16-17, and 22-23 are rejected under 35 U.S.C. 102(b) as

being anticipated by Bradley (U.S. Patent Application Publication #2002/0065810).

As per claim 1: Bradley discloses a drive device for a record carrier, said drive

device comprising: interface means for providing a first format for inputting or outputting

data according to a first file system **(see figure 6, element 604 and [0130])**; and

mapping means for mapping said first format to a second format according to a second

file system used on said record carrier **(see [0132])**; wherein said mapping means is

adapted to reserve space on the record carrier for an image of said first file system in

the logical specification of said second format **(see [0096]-[0100])**, wherein said

mapping means is further adapted to split said image of said first file system into

different categories based on properties of data structures, and to store said split file

components in different files of said second file system **(see [0034] and [0044]-[0045])**

wherein said mapping means is arranged to treat said reserved space as a partition of

said first file system **(see [0135], the mount command is used to attach file

systems, e.g. partitions, of a hard drive to the Unix system file system tree.

Therefore when using a Unix system, the reserved space will be treated as a

partition when implementing the mount/unmount commands)**.

As per claim 4: wherein said first file system is a FAT file system **(see [0041])**.

As per claim 6: wherein said record carrier is an optical disk **(see [0114], an

optical disk is capable of storing data)**.

As per claim 11: wherein said image of said first file system corresponds to a

single file of said second file system **(see [0034] and [0044]-[0045], if there was only

one category of data stored in the file system, then there would be only one class

of data created and therefore only one file)**.

As per claim 12: wherein said device provides access to files of said second file

system via said interface means by hosts which do not know said second file system

(see [0110]).

As per claim 13: wherein said second file system is interpreted by said mapping

means which is arranged to write equivalent structures of said first file system to said

record carrier **(see [0108])**.

As per claim 16: wherein said different categories comprise at least one of a

robust allocation class and a volatile allocation class for file structures **(see [0034])**.

As per claim 17: wherein said mapping means is arranged to mount said second file system on said record carrier and to translate said second file system in a memory means into equivalent structures of said first file system **(see [0133])**.

As per claim 22: wherein said mapping means is arranged to provide a dynamic mapping between data structures of said first file system and data structures of said second file system **(see [0132])**.

As per claim 23: Bradley discloses a method of reading from or writing to a record carrier, said method comprising the steps of: outputting or inputting data using a first format according to a first file system **(see figure 6, element 604 and [0130])**; and mapping said first format to a second format according to a second file system used on said record carrier **(see [0132])**; reserving space on the record carrier for an image of said first file system in the logical specification of said second format **(see [0096]-[0100])**; splitting said image of said first file system into different categories based on properties of data structures **(see [0034] and [0044]-[0045])**; storing said split file components in different files of said second file system **(see [0034] and [0044]-[0045])** wherein the mapping step is arranged to treat said reserved space as a partition of said first file system **(see [0135], the mount command is used to attach file systems, e.g. partitions, of a hard drive to the Unix system file system tree. Therefore when using a Unix system, the reserved space will be treated as a partition when implementing the mount/unmount commands)**.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-3, 7, 18-19 and 21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Bradley (U.S. Patent Application Publication #2002/0065810) in view

of well known practices in the art.

As per claim 2: Bradley discloses all the limitations of claim 1 as discussed

above. Bradley does not explicitly teach that said interface means is a standard

interface for storage devices. Standard interfaces for storage devices were well known

in the art at the time the invention was made. Providing a device to access the rotating

media with a standard interface would provide the greatest compatibility for using the

device in a computer system, and Official Notice is hereby taken. It would have been

obvious to a person having ordinary skill in the art to which said subject matter pertains

to have modified the system disclosed by Bradley to use a standard interface for the

rotating media device to provide the greatest compatibility among computer systems.

As per claims 3 and 7: Ando discloses all the limitations of claim 1 as discussed

above. Bradley fails to disclose said standard interface is a PCMCIA, Compact Flash,

or MMCA interface. PCMCIA interfaces were well known in the art at the time the

invention was made. Providing the storage device with a PCMCIA interface would allow

the device to also be portable and useable with laptop computers, since the PCMCIA

port was common on laptops and was the main port were expansion devices were

connected, and Official Notice is hereby taken. It would have been obvious to a person

having ordinary skill in the art to which said subject matter pertains to have modified the

system disclosed by Bradley to provide the storage device with a PCMCIA port to allow

the device to be portable and useable with laptop computers.

As per claim 18: Bradley discloses all the limitations of claims 1 and 17 as

discussed above. Bradley fails to disclose that the memory means is a non-volatile

memory. Bradley discloses loading the super-block into memory, see [0133], which will

change as the consumer system updates the data. If the system were to lose power,

then all the data that was updated is also lost. It was well known in the art at the time

the invention was made to utilize non-volatile memory in instances where data is to be

protected during loss of power, and Official Notice is hereby taken. It would have been

obvious to a person having ordinary skill in the art to which said subject matter pertains

to have modified the system disclosed by Bradley, to load the super-block into non-

volatile memory so that any updates that are made to the data are not lost in the event

that the host system loses power before the data can be transferred back to disk

storage.

As per claim 19: wherein said second file system is updated by said device when

said record carrier is ejected **(see [0135], since the file system is mounted when the**

requester has a Unix based file system, before the device can be removed from

the system, e.g. ejected, the device must first be un-mounted. During this un-

mount process any data structures that are in memory that have been updated are written back to the storage media. Therefore it is inherent that the file system would be updated when said record carrier is ejected).

As per claim 21: Bradley discloses all the limitations of claims 1 and 17 as discussed above. Bradley fails to disclose wherein said mapping means is arranged to store static data structures of said first file system in a file on said record carrier and volatile data structures of said first file system in said memory means. Storing volatile data structures in said memory allows the system to make changes to the file system much more efficiently, as there is less latency involved when writing to local memory as opposed to secondary storage, and Official Notice is hereby taken. It would have been obvious to a person having ordinary skill in the art to which said subject matter pertains to have modified the system disclosed by Bradley, to store the volatile data structures in memory, to all the system to make changes more efficiently, rather than waiting for the changes to be written to the secondary storage.

Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bradley (U.S. Patent Application Publication #2002/0065810).

As per claim 5: Bradley discloses a drive device for a record carrier, said drive device comprising: interface means for providing a first format for inputting or outputting data according to a first file system **(see figure 6, element 604 and [0130])**; and mapping means for mapping said first format to a second format according to a second file system used on said record carrier **(see [0132])**; wherein said mapping means is

adapted to reserve space on the record carrier for an image of said first file system in the logical specification of said second format **(see [0096]-[0100])**, wherein said mapping means is further adapted to split said image of said first file system into different categories based on properties of data structures, and to store said split file components in different files of said second file system **(see [0034] and [0044]-[0045])**. Bradley does not explicitly disclose said second file system is a UDF file system. Bradley discloses that the system is capable of using multiple types of media for storage **(see [0114])**, and that the file system translator is a superset of all known file systems and is capable of translating a request from any consumer I/O file system to the file system of the storage medium **(see [0134])**. There are a limited number of file systems in existence, each one providing certain advantages and disadvantages. UDF file systems are typically used with optical mediums, e.g., CD-ROM. Since an optical medium could be used with this system it would have been obvious to a person of ordinary skill in the art to use a UDF file system to store data on the storage medium. "When there is a design need for market pressure to solve a problem and there are a finite number if identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp." *KSR*, 82 USPQ2d at 1397.

As per claim 10: Bradley discloses a drive device for a record carrier, said drive device comprising: interface means for providing a first format for inputting or outputting data according to a first file system **(see figure 6, element 604 and [0130])**; and

mapping means for mapping said first format to a second format according to a second

file system used on said record carrier **(see [0132])**; wherein said mapping means is

adapted to reserve space on the record carrier for an image of said first file system in

the logical specification of said second format **(see [0096]-[0100])**, wherein said

mapping means is further adapted to split said image of said first file system into

different categories based on properties of data structures, and to store said split file

components in different files of said second file system **(see [0034] and [0044]-[0045])**.

Bradley fails to disclose said mapping means is arranged to apply a defect management

to said reserved space. All storage mediums are subject to faults, and often times there

are a number of sectors which are not capable of storing data. At format time these

deficiencies are detected and the mapping of the file system routes storage request

around these bad areas. The next problem is when a defective sector is found on an

active drive. Reformatting to detect these bad sectors again is not a viable option. To

work with this problem, defect management is implemented to remap data to a set of

reserved sectors that are used to replace defective sectors found after format, and

Office Notice is hereby taken. It would have been obvious to a person having ordinary

skill in the art to which said subject matter pertains to have modified the system

disclosed by Bradley to implement defect management to account for bad sectors that

may be located during use of the storage medium so that the system can continue to

reliable use the medium and "map out" the bad areas to prevent data corruption or loss.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bradley (U.S. Patent Application Publication #2002/0065810) in view of Orcutt (U.S. Patent #6,377,958) and well known practices in the art.

As per claim 14: Bradley discloses a drive device for a record carrier, said drive device comprising: interface means for providing a first format for inputting or outputting data according to a first file system **(see figure 6, element 604 and [0130])**; and mapping means for mapping said first format to a second format according to a second file system used on said record carrier **(see [0132])**; wherein said mapping means is adapted to reserve space on the record carrier for an image of said first file system in the logical specification of said second format **(see [0096]-[0100])**, wherein said mapping means is further adapted to split said image of said first file system into different categories based on properties of data structures, and to store said split file components in different files of said second file system **(see [0034] and [0044]-[0045])**. Bradley fails to disclose said mapping means is adapted to convert a file of said first file system into clusters of a predetermined size which corresponds to a packet size of said second file system and to align said cluster with packets of said second file system. Orcutt discloses that different file systems may have different cluster sizes, and when converting between the two the cluster will have to be resized to match one of the file systems **(see column 16, lines 44-52)**. Another issue when storing data is fragmentation. Internal fragmentation occurs when a cluster or sector is not completely filled with data. This often occurs at the ends of files when there is just a little bit of data left to store, but not a whole sector or clusters worth. The problem with internal

fragmentation is that this area is unusable to the file system, and there is almost no way

to reclaim it. The exception being that if the file is altered and becomes longer, the file

can then expand and fill that last cluster or sector. Official Notice of this is hereby

taken. Therefore, it would have been obvious to one of ordinary skill in the art to modify

the system disclosed by Bradley to align the clusters and packets, and to resize the

clusters into a size that corresponds with a size of the packets to reduce internal

fragmentation and get the most efficient use of the storage area.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bradley

(U.S. Patent Application Publication #2002/0065810) in view of well known practices in

the art as applied to claims 18-19 and 21 above, and further in view of MRAM

(http://en.wikipedia.org/wiki/MRAM).

As per claim 20: the combination of Bradley and well known practices in the art

disclose all the limitations of claims 1 and 17-19 as discussed above. The combination

fails to disclose that said non-volatile memory is an MRAM. MRAM is another type of

non-volatile memory and provides the advantages of speeds similar to SRAM, density

similar to DRAM, and no degradation over time as in flash memories **(see MRAM,**

"Overall"). It would have been obvious to a person having ordinary skill in the art to

which said subject matter pertains to have modified the combination of Bradley and well

known practices in the art to use MRAM, to gain the advantages of speeds similar to

SRAM, density similar to DRAM, and no degradation over time as in flash memories, as

disclosed by MRAM.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Edward J. Dudek whose telephone number is 571-270-

1030. The examiner can normally be reached on Mon thru Thur 7:30-5:00pm Sec. Fri

7:30-4 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Kim can be reached on 571-272-4182. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matt Kim/
Supervisory Patent Examiner, Art
Unit 2186

/E. J. D./
Examiner, Art Unit 2186

August 19, 2008